# REQUEST FOR PROPOSAL
# FOR
# 180 FOOT TELECOMMUNICATIONS TOWER
# GOFF HILL RESERVOIR

CITY OF LEWISTON, MAINE

L-A-9-1-1/ANDROSCOGGIN COUNTY
COMMUNICATIONS EQUIPMENT, LLC

CITY OF AUBURN, MAINE

BID No. LA 2017-004
BIDDING, CONTRACT REQUIREMENTS
AND SPECIFICATIONS

November 1, 2017

SEBAGO TECHNICS

75 John Roberts Road
Suite 1A
South Portland, ME 04106-6963
Ph.: 207-200-2100 Fax: 207-856-22

# 180 FOOT TELECOMMUNICATIONS TOWER
# GOFF HILL RESERVOIR

TABLE OF CONTENTS

**City of Lewiston**
**Finance Department**

Allen Ward, Purchasing Agent
27 Pine Street, Lewiston ME
207-513-3040

LA 2017-004
LA 911 Communication Towers
October 31, 2017

Sir/Madam:

Sealed bids will be received in the office of the Purchasing Agent on **Tuesday, November 14, 2017 until 2:00 p.m**. at which time they will be publicly opened and read aloud for **LA 911 Communication Towers** for the LA 911 Committee.

Please use a sealed envelope clearly marked with the bid name and number when submitting your bid. **Only sealed bids will be accepted. Faxed bids <u>will not</u> be considered.**

All Contractors who plan to submit a proposal are required to attend a **Mandatory Pre-bid Meeting**, which will be held **Friday, November 3, 2017 at 9:00 a.m.** local prevailing time at the project site at the Goff Hill Reservoir to present and review elements of the project, to examine the work site and ask questions. Attendance at this meeting by the Contractor or his/her qualified representative is a mandatory prerequisite for the acceptance of the proposal from the Contractor.

The LA 911 Committee reserves the right to accept or reject any and all proposals.

Sincerely,

Allen Ward
Purchasing Agent

# NOTICE TO CONTRACTORS

# LEWISTON-AUBURN 9-1-1 COMMITTEE

## Project Name: 180 FOOT TELECOMMUNICATIONS TOWER GOFF HILL RESERVOIR Bid #: LA 2017-004

The Lewiston-Auburn 9-1-1 Committee ("LA911 Committee") will receive sealed bids for the 180 FOOT TELECOMMUNICATIONS TOWER, GOFF HILL RESERVOIR until **2:00 p.m.** prevailing local time on **Tuesday, November 14, 2017** at the Office of the Finance Director, City of Lewiston, located at 27 Pine Street, Lewiston, Maine 04240. Bid documents shall be in clearly marked sealed envelopes titled 180 FOOT TELECOMMUNICATIONS TOWER, GOFF HILL RESERVOIR – all bids will be opened at the Office of the Finance Director and publically read aloud.

**MANDATORY PRE-BID CONFERENCE**

All Contractors who plan to submit a proposal are required to attend a **Mandatory Pre-bid Meeting**, which will be held **Friday, November 3, 2017 at 9:00 a.m.** local prevailing time at the project site at the **Goff Hill Reservoir (491 Court Street, Auburn, Maine)** to present and review elements of the project, to examine the work site and ask questions. Attendance at this meeting by the Contractor or his/her qualified representative is a mandatory prerequisite for the acceptance of the proposal from the Contractor.

The project is being completed for the benefit of the LA911 Committee (aka L-A-9-1-1/Androscoggin County Communications Equipment, LLC) of which the Cities of Lewiston and Auburn are members. The project will generally will be the demolition of the existing communications tower and equipment at the Goff Hill Reservoir and the installation of a new tower and equipment. During the installation, the existing tower is expected to be kept operational. In addition, depending on project costs, the project may include the installation of additional communications equipment for the tower at the Lewiston Water District site on Webber Avenue in Lewiston, Maine.

The entire project shall be completed by **within 90 days of the Notice to Proceed.**

**Locations:** Goff Hill Reservoir (491 Court Street) Auburn Maine and 603 Webber Avenue, Lewiston, Maine.

A copy of the Contract Documents for the work may be obtained on the City Website at: www.lewistonmaine.gov under Purchasing and "Bids and Awards".

Submit technical questions in writing to the attention of: **Allen Ward, City of Lewiston Purchasing Agent at award@lewistonmaine.gov , Mark Davis, Dirigo Wireless, (207) 513-1110 Fax: (207) 514-7407, e-mail: MarkDavis@DirigoWireless.com no later than 3 business days before the scheduled bid opening. A copy of the technical questions shall also be sent to Paul LeClair, (207) 786-5380 ext. 2, Fax: (207) 795-0743, e-mail: 911director@auburnmaine.gov**

The proposal must be signed by the bidder with his/her full name and address and be enclosed in a sealed envelope together with the bid security. The sealed envelope shall be marked with the name and address of the bidder and entitled:

and addressed to: "Finance Director, City Hall, Lewiston, Maine". If the proposal is forwarded by mail, the sealed envelope containing the proposal and marked as above must be enclosed in a second envelope which shall be addressed to: "Finance Director, City Hall, 27 Pine Street, Lewiston, Maine 04240." All mailed proposals should be sent by registered mail to ensure delivery.

Any bidder may withdraw his/her proposal prior to the scheduled time for the opening of proposals upon presentation to the Purchasing Agent of a request, in writing, to do so. Any bidder who withdraws his/her proposal within thirty (30) days after the actual opening thereof shall be considered to have abandoned his/her proposal and the bid security accompanying the proposal will be forfeited to the LA 911 Committee. Any proposal received after the scheduled opening time will not be considered.

**Bid Bond**

**No proposal will be considered unless it is accompanied by a bid security in the form of a bid bond or certified check in the amount of five (5%) percent of the total bid price, made out in favor of the LA 911 Committee.** All bid securities will be released upon deliverance of a signed contract or, if no contract award is made, within forty-five (45) days after the opening of the proposals, unless forfeited as herein stipulated. No bid may be withdrawn for at least 60 days after receipt of bids unless released by the City of Lewiston.

**Federal Requirements**

The Contractor must comply with all the Safety and health Regulations (CFR29 part 1926 and all subsequent amendments) as promulgated by the US Department of Labor on June 24, 1974, the Department of Labor Regulations relating to Copeland "Anti-Kickback Act (18 U.S.C. 874) as supplemented by 29 CFR part 3, Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by 29 CFR part 5, and Occupational Safety and Health Standards (OSHA) (29 CFR part 1910).

The Contractor must comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), Section 508 of the Clean Water Act (33 U.S.C. 1368), and Executive Order 11738. Contractors are urged to become familiar with the requirements of these regulations.

The successful bidder must furnish within 10 calendar days after the Notice of Award the required number of copies of the signed Agreement, 100% Performance Bond, 100% Payment Bond, and a complete list of sub-bidders and begin execution of this contract within 10 calendar days following the Notice to Proceed.

The contract must be signed within ten (10) days, Saturdays, Sundays, and holidays excepted, after the date of notification to the winning bidder by the LA 911 Committee of the acceptance of his/her proposal and readiness of the contract to be signed. If the bidder fails or neglects, after such notification, to execute the contract, the LA 911 Committee may determine that the proposal has been abandoned and, in such case, the bid security accompanying the proposal will be forfeited to the City of Lewiston.

**Disclaimer**

The LA911 Committee reserves the right to reject any or all Bids, to waive any technical or legal deficiencies, and to accept any Bid that it may deem to be in the best interests of the City of Lewiston, the City of Auburn and L-A-9-1-1/Androscoggin County Communications Equipment, LLC and to negotiate the contract Price with any Bidder, and to omit any item or items deemed advisable for the interest of the City of Lewiston, the City of Auburn and L-A-9-1-1/Androscoggin County Communications Equipment, LLC.

All proposals must be made on the blank Proposal Form bound in the Contract Documents, or as otherwise provided for in the Specifications. Bidders shall state prices for each separate item of work as called for in the

Proposal Form. These prices are to cover all the expenses incidental to the completion of the work in full conformity with the Contract Documents.

The prices must be stated both in words and figures. Should a discrepancy be found between the prices written in words and the prices written in figures, the prices written in words shall govern. Proposals which do not contain prices for all items which are called for or which otherwise are not in conformity with this Notice may be rejected.

Each bidder shall make his/her Proposal from his/her own examinations and estimates, and shall not hold the City, its agents or employees responsible for, or bound by, any schedule, estimate, sounding, boring, or any plan of any thereof; and shall, if any error in any plan, drawing specifications or direction relating to anything to be done under this contract comes to his/her knowledge, report it at once, in writing, to the Purchasing Agent.

All materials and labor required to complete the work will be supplied by the Contractor unless otherwise provided for in the Supplemental Specifications. The cost and expense of all the necessary labor, tools and equipment required to complete the work shall be included in the prices stated in the Proposal.

# LEWISTON-AUBURN 9-1-1 COMMITTEE

## 180 FOOT TELECOMMUNICATIONS TOWER
## GOFF HILL RESERVOIR
## Bid #: LA 2017-004

## PROPOSAL

Proposal of _____
Name

_____
Address

The name and address shown on the above lines shall be the official name and address of the person, partnership or corporation submitting this proposal and shall agree with the "Signature of Bidder" in the case of an individual; the "Name of Firm or Partnership" in the case of a firm or partnership; the "Name of Bidder" in case of a corporation.

TO: **City of Lewiston**
**Finance Department**
**Attn: Heather Hunter, Finance Director**
**27 Pine Street**
**Lewiston, Maine 04240**

The undersigned having carefully examined the Plans; the Standard Specifications; the Supplemental Specifications; Contract Agreement and Contract Bonds contained herein for the **180 Foot Telecommunications Tower, Goff Hill** on which proposals will be received until the time specified in the "Notice to Contractors", this work being situated at the location described in the "Notice to Contractors" sheet number N-1 to N-2 of this request for proposal, **180 Foot Telecommunications Tower, Goff Hill** and in case of award, do(es) hereby propose and offer to enter into a contract to supply all the materials, tools, equipment and labor required to perform and construct the whole of the work in strict accordance with the terms and conditions of this contract at the prices (lump sum) as stated in the following "Schedule of Items."

This Proposal may be accepted by the LA911 Committee at any time within ninety (90) calendar days after opening of the bids. The City reserves the right to accept or reject any and all bids for any reason so determined.

(Fill out prices in ink, in writing and in figures; in case of a discrepancy between prices in writing and prices in figures, the writing shall govern. In case of discrepancy between total of items and total of bid amount stated, total of items shall govern. Use the pages in this document when submitting proposal and submit contract document intact.)

**The pay items contain only Lump Sum items. All incidental work or work not specifically mentioned necessary to complete the project is considered incidental to one of the Lump Sum items of the contract**.

**The Contractor will not be allowed to start the work until a Notice to Procced has been received from the LA911 Committee and is required to complete the work in its entirety and ready for acceptance within 90 days.** The project is required to be completed in compliance with the Maine Department of Environmental Protection erosion and sediment control requirements and applicable construction standards of the City of Auburn. If the contractor does not comply with said requirements or standards, they will be subject to environmental enforcement and any State or federal fines that are levied against them, the City or project.

If the contractor fails to meet the prescribed construction time period or fails to comply with environmental requirements, the Contractor may be subject to liquidated damages at the LA911 Committee's discretion. The assessed liquidated damages for the project shall be $2,500.00 per day beyond the prescribed number of days to complete allotted for the project.

The Contractor shall also be prepared to provide immediate response and service (within 2 hours) for emergency projects that may result from natural disasters, storms, or public safety concerns. The City may request items beyond those specified in the Contract Documents which shall be negotiated with the Finance Director.

There may be situations were typical design parameters cannot be achieved due to natural and budgetary limitations that may include, but are not limited to, ledge, disputes with private property abutters or funding restrictions. In these situations, the Contractor shall cooperate with the City to achieve the project intent and shall not seek separate compensation for delays or project modifications arising out of these or similar circumstances.

# Schedule of Items – 180 Foot Telecommunications Tower
# Goff Hill Reservoir

| Pay Item | Item | Amount (In Figures) |
|---|---|---|
| 10 | Demolition, land clearing, stumping and grubbing | $_____ |
| 20 | Earthwork (rough grading, cuts/fills incl. ledge removal) | $_____ |
| 30 | Excavation, installation of road base materials and regrade existing access. | $_____ |
| 40 | Erosion and sedimentation control measures | $_____ |
| 41 | Final seeding/stabilization of site | $_____ |
| 50 | Foundation design and installation, concrete work for equipment pad(s) | $_____ |
| 60 | Fencing and gate access | $_____ |
| 70 | Provide and install VFP 12' x 20' Shelter including foundation as designed/recommended by the manufacturer | $_____ |
| 80 | Furnish hardware and mount the specified antennas (LMR and Microwave) and/other equipment as shown as indicated in the specifications | $_____ |
| 90 | Provide and erect tower (design by Valmont Structures) | $_____ |
| 100 | Furnish and install 500 gal. propane tank and Generac 25 KVA generator | $_____ |
| 110 | Underground utility services to tower compound from utility pole(s) | $_____ |
| 111 | Site installation of site electric, meter enclosure, telecom hand hole in tower compound | $_____ |
| 112 | Site grounding materials and installation for all site structures | $_____ |
| 113 | Install lightning rod and strobe light (materials and installation) | $_____ |
| 114 | Electrical, telecom, coaxial installation conduit installation for equipment including ice bridge | $_____ |
| 115 | Provide required connections of equipment to operate with controls | $_____ |
| | **TOTAL BID PRICE (Must Equal in Figures, Total State of Above)** | $_____ |

| | | |
|---|---|---|
| OP-1 | Option 1: Provide and install VFP 12' x 16' Shelter at Webber Avenue Site including foundation as designed/recommended by the manufacturer, new ice bridge, hardware, reroute cables, ground per R56, and install microwave unit | $_____ |
| OP-2 | Option 2: Provide and install VFP 10' x 10' Shelter at Webber Avenue Site including foundation as designed/recommended by the manufacturer, new ice bridge, hardware, reroute cables, ground per R56, and install microwave unit | $_____ |
| OP-3 | Furnish and install 500 gal. propane tank and Generac 25 KVA generator at Webber Site | $_____ |
| OP-4 | Underground utility services to tower compound from utility pole(s), installation of site electric, meter enclosure, and telecom | $_____ |

The undersigned also agrees as follows:

FIRST: To do any extra work, not covered by the above schedule of items, which may be ordered, and to accept as full compensation therefore such prices as may be agreed upon in writing by the City and the Contractor.

SECOND: Begin work and complete the work promptly as agreed to by the LA911 Committee for the project. The Contractor shall commence work upon authorization by the Owner for the project within 7 calendar days of consultation with owner and Notice to Proceed. Work shall be completed within the specified timeframe. Upon starting the work, the Contractor shall remain on site until such time that the project is complete. The Contractor shall also provide immediate response and service (within 2 hours of notification by City) for emergency projects that may result from natural disasters, storms, or public safety concerns.

THIRD: That this offer is to continue open to acceptance until the formal contract is executed by the successful bidder of this work, and the City may at any time without notice accept this proposal whether any other proposal has previously been accepted or not. Provided, however, that the City will accept, in writing, one of the proposals made, or reject all proposals made, within ninety (90) calendar days after the date of opening of the proposals.

The Undersigned hereby declares that he/she or they are the only person(s), firm or corporation interested in this proposal as principal, that it is made without any connection with any other person(s), firm or corporation submitting a proposal for the same.

The Undersigned hereby declares that they have read and understand all conditions as outlined in the contract and specifications, and that their proposal is made in accordance with same.

The Undersigned hereby declares that any person(s) employed by the City of Auburn, Maine, City of Lewiston, Maine, Androscoggin County, Maine or LA911, who has direct or indirect personal or financial interest in this proposal or in any portion of the profits which may be derived therefrom has been identified and the interest disclosed by separate attachment. (Please include in your disclosure any interest which you know of. An example of a direct interest would be a City employee who would be paid to perform services under this proposal. An example of an indirect interest would be a City employee who is related to any officers, employees, principal or shareholders of your firm or to you. If in doubt as to status or interest, please disclose to the extent known.)

Respectfully submitted this _____ day of _____, 2017.

(Phone, Fax and Signatures for an Individual, Firm, Partnership or Corporation on next page.)

IF AN INDIVIDUAL, SIGN HERE

Signature of Bidder _____

Address _____

_____

IF A FIRM OR PARTNERSHIP, SIGN HERE

Signature of Bidder _____

Name of Firm or Partnership _____

Business Address, Phone No. and Fax No._____

_____

Names and Addresses of Members of Firm or Partnership:

_____

_____

Social Security No. and Tax I.D. No._____

_____

IF A CORPORATION, SIGN HERE

Name of Bidder _____

Authorized Signature _____

(name) (title)

Business Address, Phone No. and Fax No._____

_____

Tax I.D. No._____

Incorporated under the Laws of the State of _____

Names and Addresses of Officers of the Corporation:

President _____

Secretary _____

Treasurer _____

_____ss

Before me, personally appeared _____ and acknowledged that the signature to the preceding bid is his/her signature in his/her official capacity.

Date: _____ _____

Notary Public - Signature and Seal

**ALL CORPORATIONS MUST SIGN THIS FORM**
**AND SUBMIT WITH THE BID PROPOSAL**

(Insert copy of that part of the records of the corporation wherein authority is given to the officer of that corporation to sign this bid on behalf of the corporation.)

_____

_____

_____

_____

_____

_____
(date)

The above is a true copy of the records of the _____

Corporation, which records are in my legal custody.

_____
Officer having custody of the records

_____ss

Before me appeared, _____, _____

_____ of the _____ Corporation, and made

oath that the above statement is true.

_____
Notary Public - Signature and Seal

## NOTICE

(This Must Be Filled Out)

The full names and residences of all persons interested in this bid as principals are as follows: (In case of Corporation, include and identify President, Treasurer, and Manager)

_____ _____

_____ _____

_____ _____

## LIST OF REFERENCES AND PROJECT NAME

(This Must Be Filled Out)

| Project Name | Date Completed | Type of Project | Name of Contact | Contact Phone No. |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |

**AGREEMENT BETWEEN THE**

**LA911 COMMITTEE**

**AND**

**(CONTRACTOR)**

**AGREEMENT** entered into this _____ day of _____, 2017, by and between the **LA911 COMMITTEE,** a body politic and corporate, (hereinafter the **"COMMITTEE"**), and _____, located at _____ (hereinafter the **"CONTRACTOR"**).

**W I T N E S S E T H**

**WHEREAS,** the **COMMITTEE** requested a proposal, entitled **180 Foot Telecommunications Tower, Goff Hill Reservoir;** and

**WHEREAS,** the **CONTRACTOR** did under date of _____, 2017, submit a Bid for such work; and

**WHEREAS,** after due consideration of all the Proposals, the **COMMITTEE** did award the Bid to the **CONTRACTOR**;

**NOW THEREFORE,** in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The **CONTRACTOR** shall furnish all labor, materials, equipment and transportation and shall perform all work required for the construction and completion in accordance with the specifications contained in the contract documents entitled **Goff Hill Communications Tower** dated **October 18, 2017** (hereinafter referred to as "Contract Documents") of which this Agreement is a part. All work shall be performed in strict conformance with the provisions of this Agreement, the **Contractor**'s Proposal, General and Detailed Provisions, Plans, and Specifications of the Contract Documents which are attached hereto and made a part of this Agreement.

   The restatement in this Contract of any of the terms of said Contract Documents and Standard Specifications shall not be deemed to waive any terms not so restated.

2. It is agreed that the quantities given in the "Schedule of Items" in the **CONTRACTOR**'s Proposal Section of the Contract Documents will be used as the basis for determining the amount due under this Contract Agreement.

3. The **CONTRACTOR** covenants and agrees that all work performed and materials used shall be free from all defects, and that all work be performed as specified.

4. The **COMMITTEE** reserves the right to require Waivers of Lien from subcontractors and/or suppliers prior to each progress payment made to the **CONTRACTOR** pursuant to the terms of this Agreement.

5. Prior to the execution of this Agreement, the **CONTRACTOR** shall procure and maintain General Liability Insurance coverage and Automobile Insurance coverage in amounts of not less than Five Hundred Thousand Dollars ($500,000.00) combined single limit, naming the **COMMITTEE** as an additional insured thereon, and shall also procure Workers' Compensation Insurance coverage. **CONTRACTOR** shall furnish and thereafter maintain certificates evidencing such coverage, which certificates shall guarantee thirty (30) days' notice of termination of insurance from insurance company or agent.

6. To the fullest extent permitted by law, the **CONTRACTOR** shall defend, indemnify and hold harmless the **COMMITTEE**, its officers and employees, from and against all claims, damages, losses, and expenses, just or unjust, including but not limited to the costs of defense and attorneys' fees arising out of or resulting from the performance of the Agreement, provided that any such claims, damage, loss or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, including the loss of use therefrom, and (2) is caused in whole or in part by any negligent act or omission of the **CONTRACTOR**, anyone directly or indirectly employed by it, or anyone for whose act it may be liable.

7. Upon receipt of executed contracts and insurance as required, the **COMMITTEE** will send an executed **COMMITTEE** contract to the **CONTRACTOR.** The **CONTRACTOR** agrees to perform no work under this Agreement until it receives Notice to Commence Work for a project(s) and to complete the work within the time limits given in the Proposal. Prior to beginning any work, the Contractor shall field review the site with the Committee and shall establish a schedule for completing the work within the specified contract period.

8. Any mechanic's lien or any other lien which may be filed against the premises which are subject of this Contract by reason of the work described herein shall be defended (by counsel reasonably acceptable to the **COMMITTEE**) and promptly discharged by the **CONTRACTOR** at its own expense. The **COMMITTEE** may require the **CONTRACTOR** to provide a bond satisfactory to the **COMMITTEE** and indemnify it against any lien and as substitution in place of a lien. If the **CONTRACTOR** should fail either to defend the **COMMITTEE** against the lien or to discharge it, then the **COMMITTEE** may do so at the **CONTRACTOR**'s expense. In the event of such an undertaking by the **COMMITTEE**, the **CONTRACTOR** will promptly reimburse the **COMMITTEE** for all its costs and expenses in so doing including, but not limited to, reimbursement of the **COMMITTEE**'s reasonable counsel fees, as well as costs which may be incurred by it in substituting a bond in place of the lien.

9. The **CONTRACTOR** shall perform the work to the satisfaction of the responsible **COMMITTEE** official or their designee who will have the right of inspection at all times, and whose approval and acceptance of the work will be a condition precedent to payments by the **COMMITTEE** under this Contract. **COMMITTEE** inspectors will have the authority to stop work in progress if such work is being done contrary to the plans, specifications, or engineering practice. This notice may be given verbal or written order.

10. Any controversy or claim arising out of or related to this Agreement which cannot be resolved between the parties shall be submitted to the Superior Court for Androscoggin County. At the Committee's discretion, non-binding mediation maybe required for dispute resolution.

11. The **CONTRACTOR** shall guarantee the work for a period of one (1) year and as specified in contract documents for the faithful remedy of any defects due to faulty materials or workmanship and payment for any damage resulting therefrom.

12. The **CONTRACTOR** shall keep accurate records of all services performed under this Agreement and shall submit such information to the **COMMITTEE** on a monthly basis. Payment for such services shall be made to the **CONTRACTOR** not more than thirty (30) days after receipt of said forms and acceptance of the work by the **COMMITTEE**. The **COMMITTEE** will keep 10% retainage for each monthly invoice for services. The retainage will be released or reduced as determined by the **COMMITTEE** at completion of the project.

13. The **COMMITTEE** may terminate this Agreement for cause by written Notice to the **CONTRACTOR.** In the event of such termination, the **CONTRACTOR** shall not be entitled to any further payment under this Agreement from the date of receipt of said Notice except for services satisfactorily performed prior to the date of receipt of the Notice if the **COMMITTEE** does not have damages exceeding the value of the satisfactory work.

14. The **COMMITTEE** will have the right to terminate this Agreement at any time for its convenience on prior written Notice to the **CONTRACTOR**. If this Agreement is terminated by the **COMMITTEE** for convenience, the **COMMITTEE** will pay the **CONTRACTOR** for all work performed and all materials purchased pursuant to this Agreement prior to receipt of said Notice.

15. The **CONTRACTOR** shall verify the locations of existing utilities with the appropriate utility companies prior to the start of construction. The project will require the removal and replacement of underground utilities. The contractor is required to sequence the work to accommodate the utility work and provide a means for the utility company to provide temporary service. Note that access for trailers attached to vehicles shall be accommodated by the contractor throughout construction.

16. The **CONTRACTOR** shall be fully responsible to the Owner for the acts and omissions of its subcontractors, and of person either directly or indirectly employed by them, and shall hold subcontractors to the same terms and conditions as THE **CONTRACTOR** is held under this Agreement. The **CONTRACTOR** shall inform subcontractors that the Owner will notify them they may not make claims or file liens against the project.

**IN WITNESS WHEREOF,** the said **LA911 COMMITTEE** has caused this Agreement to be signed and sealed by _____, its Finance Director, thereunto duly authorized, and _____ has caused this Agreement to be signed and sealed by _____, its _____, thereunto duly authorized, the day and year first above written.

WITNESS **LA911 COMMITTEE**

_____ BY: _____

Director/Treasurer

**CONTRACTOR**

_____ By: _____

_____
(Print or type name)

Its _____

**WAIVER OF LIEN**

MATERIAL OR LABOR

State of _____

County of _____

To all whom it may concern:

The undersigned _____ has been employed to furnish _____ for the project known as **180 Foot Telecommunications Tower, Goff Hill Reservoir**, City of Auburn, County of Androscoggin, State of Maine.

The undersigned for and in consideration of the sum of $ _____ and other good and valuable consideration the receipt whereof is hereby acknowledged, do hereby waive and release any and all rights and liens, or claim of right to lien on said above described project under the statutes of the State of Maine relating to Mechanic's Lien on account of Labor or Material or both furnished or which may be furnished by the undersigned to or on account of said _____ for said building and premises.

This Waiver of Lien shall become effective upon the issuance of a check by the LA911 Committee payable to _____ and _____ in the amount of _____.

Given under oath, my hand and seal this _____ day of _____, 2017.

By: _____

_____

Its _____

Notarized: _____ this _____ day of _____ ,2017.

My commission expires _____

**WAIVER OF LIEN**
(Subcontractor/Supplier/Employee)

The undersigned has performed labor and furnished materials and/or performed services for _____ on behalf of the LA911 Committee, in performance of the contractor's agreement of _____ with the LA911 Committee for the **180 Foot Telecommunications Tower, Goff Hill Reservoir** - _____ at _____ _____.

In consideration of the sum of $ _____, the undersigned hereby waives all rights and liens, including, but not limited to, liens pursuant to 10 M.R.S.A. Sec. 3251, et. Seq., which the undersigned may now or hereafter claim or assert against the above described project; and the LA911 Committee.

This Waiver of Lien shall become effective upon the issuance of a check by the LA911 Committee payable to _____ in the amount of $_____.

**IN WITNESS WHEREOF** the undersigned has hereto set its hand this _____ day of _____, 2017.

By: _____

_____

Its _____

State of Maine
_____, ss

Before me appeared _____ and acknowledged that the signature to the preceding waiver is his/her signature in his/her official capacity.

Date: _____

_____
(Notary Public)

## SPECIAL PROVISIONS

The following Special Provisions shall be adhered to by the Contractor. All work associated with the special provisions shall be considered incidental to the pay items.

F-1 Working Hours

The project is considered vital to the emergency communications of Lewiston and Auburn and therefore the project shall be fully staffed by the contractor until completion. This work includes the demolition of the existing communication facilities and the connection of new tower, shelter building communications equipment, utilities and related construction and appurtenances**. It is imperative that the existing communications facilities are left in operation until the new facilities are operational.**

For this work, no work shall proceed on this project prior to the hour of 7:00 A.M. or after 7:00 P. M. (prevailing time) on any working day. The definition of work for this specification shall include the starting or moving of equipment, machinery, or materials. Any day worked for four hours or more shall be considered a full working day. Weekend work will only be allowed if approved by the City.

F-2 Utility Coordination

The Contractor will be responsible for notifying utility representatives of the anticipated construction schedule. The Contractor will be responsible for all utility coordination, protection of existing infrastructure and any damages to existing utilities as a result of the work at no additional cost to the City. Project will require the removal and replacement of utilities. The client's representative has completed initial coordination with the utility companies which included relocation of the overhead power lines and utility lines in the vicinity of the project. It shall be the contractor's responsibility for further coordination with the utility companies as needed.

**Utility Contacts:**

Electric: Central Maine Power
Jeffrey Lagueux
jeffrey.lagueux @cmpco.com
740 Main Street
Lewiston, ME 04240
(207) 629-4552

Water: Auburn Water & Sewer District
Sid Hazelton, Superintendent
shazeltonl@awsd.org
268 Court Street
Auburn, ME 04212
(207) 784-6469

F-3 Protection of Trees

A small number of trees, brush and understory will be removed for the project. The contractor shall remove and dispose of the stumps within the construction area. The Contractor shall be responsible for the preservation of all trees adjacent to the project which are not called to be removed. Any trees damaged by the Contractor's operations shall be repaired using approved tree dressing or paint or replaced at the City's discretion.

F-4 Maintenance and Protection of Traffic

The Contractor shall be responsible for the maintenance and protection of all vehicular and pedestrian traffic at all times during construction for deliveries of equipment and materials to the site from Court Street. The contractor shall provide the necessary flaggers and police patrols and erect suitable warning signs, flashers, barriers or temporary lighting devices of sufficient size and number to afford protection to the traveling public.

Guidelines for the construction and erection of barricades, lighting devices, warning signs, etc. may be found in the most recent edition of "Manual on Uniform Traffic Control Devices for Streets and Highways" published by the Department of Transportation of the Federal Highway Administration.

F-5 Materials

Materials shall meet the requirements specified for the various subsections of the specifications and as indicated on the contract drawings.

F-6 Survey

The contractor shall be responsible for all survey and construction layout.

F-7 Sheeting and Bracing

The contractor shall be responsible for any sheeting and/or bracing required for the satisfactory installation structures.

F-8 Waste Areas

The contractor shall be responsible for the removal and disposal of waste offsite in accordance with all applicable local, state and federal laws and regulations. No onsite waste disposal will be allowed.

F-9 Occupational Safety and Health

The Contractor is hereby advised that all work to be furnished to the City shall be performed with equipment, methods, and use of personnel in conformance with the pertinent Occupational Safety and Health Act requirements of the State of Maine and with the regulations for construction as specified by the Department of Labor and Occupational Safety and Health Administration (OSHA) as currently amended.

F-10 Pre-construction Conference

A conference will be held at the offices of The Lewiston-Auburn 9-1-1 Emergency Communications System at 552 Minot Avenue, Auburn, Maine 04210, after the awarding of the contract. At this time, the contractor will be required to submit a schedule showing project activities.

It is the purpose of this meeting to inform the various agencies of the proposed work schedule, and to give them the opportunity of discussing any difficulties and of offering suggestions to the Contractor concerning his proposed schedule in order that full cooperation may be reached.

F-11 Schedule of Operations/Project Completion

The City intents that the contractor commence operations within seven (7) days of the Notice to Proceed and the project to complete within ninety (90) days of the Notice to Procced. Substantial completion shall be the completion of all work including removal of materials and equipment from the laydown areas and restoration of all disturbed areas and ready for a review by City staff or their designee. Contractor will be responsible for any erosion control and installation of the gravel surface for the site access prior to a final review of the project. Any change to these time frames shall be requested in writing by the contractor prior to commencement of work so that the City can adequately review and respond.

F-12 Extent of Open Excavation

The extent of excavation open at any one time shall be controlled by OSHA regulations and by existing conditions and location of work area.

F-13 Limitation of Operations

The Contractor shall conduct the work at all times in such a manner and in such sequence as will assure the least interference with use of the site by the Auburn Water District and others. He shall not open up work to the prejudice or detriment of work already started. The City may require the Contractor to finish a section on which work is in progress before work is started on any additional sections, if finishing such section is essential to public convenience or the project. No extra payment will be made

F-14 Dust Control for Street

Apply water for dust control of gravel roadways throughout construction.

F-15 Questions Regarding Plan and Documents

Questions from prospective bidders relative to this Contract shall be directed to:

**City of Lewiston**
**Allen Ward, Purchasing Agent**
**27 Pine Street**
**Lewiston, ME 04240**
**(207) 513-3040;**
**email: award@lewistonmaine.gov**

and copied to:

**Dirigo Wireless**
**Attn: Mark Davis**
**349 Middle Road**
**Falmouth, ME 04105**
**(207) 513-1110, Fax: (207) 514-7407**
**e-mail: MarkDavis@DirigoWireless.com**

**Lewiston-Auburn 9-1-1 Emergency Communications System**
**Attn: Paul LeClair**
**552 Minot Avenue**
**Auburn, Maine 04210**
**(207) 786-5380 ext. 2**
**email: 911director@auburnmaine.gov**

No later than three days before bid opening.

Questions received after this time will not be addressed. Responses from the City that substantially alter this bid will be issued in the form of a written addendum to all bid holders registered at the City. Oral explanations or interpretations given before the award of this contract will not be binding. Receipt of any addenda must be acknowledged in writing as part of a proposal. Each bidder shall be responsible for ensuring that they have received any and all addenda. The City shall not assume responsibility for the receipt by the Contractor for any addenda.

F-16 Record Drawings

Upon completion of the project, the Contractor shall deliver to the City a marked-up set of plans with all changes and required information indicated in red. Final payment will not be made until Engineer receives a marked-up set of plans.

F-17 Waste Material

All waste material shall be removed from the site and the area left clean upon completion of work. Any equipment or structures damaged by the Contractor shall be repaired or replaced at no additional cost to the City.

F-18 Quality Assurance

The Contractor shall be responsible at all times for maintaining top quality assurance during performance of his work. Particular attention to compaction shall be paid during backfilling operations and installation of subgrade and subbase/base materials.

If required, in-place density tests of the backfill material will be conducted by an independent testing laboratory and be part of the costs for the project. Failure to meet initial testing shall require supplemental testing and shall be the contractor's responsibility. Satisfactory compaction shall be a minimum of 90% of the maximum density for the embankment and a minimum of 95% of the maximum density for gravel base course and subbase gravel course.

F-19 Sanitary Facilities

The Contractor shall provide self-contained toilet units in sufficient numbers for use of all persons involved in the work.

F-20 Bids

No bids shall be withdrawn within a period of ninety (60) days after the opening of the bids.

F-21 Mobilization, bonds, sanitary facilities, storage/office trailers and other misc. work items not specifically referenced or included in bid items.

Any Mobilization, bonds, sanitary facilities, storage/office trailers and other misc. work items not specifically referenced or included in bid items but necessary to complete the project in conformance with the plans and specifications shall be considered incidental to the costs of construction and pay items. No extra payment will be made.

F-22 Submittal of Monthly Requisitions.

Contractor shall submit monthly requisitions by the 25th of each month broken down by road and pay item for each roadway. Upon review and approval of the requisitions by the Project Engineer and the Board of Selectman, the City will process and issue payment for the requisitions less a 10% retainage and any pay items or amounts in dispute by the City. The Contractor's requisitions shall include the 10% retainage based upon the total amount of the requisition.

F-23 Maintenance Bond/Defect Guarantee.

The Contractor shall submit a 5% Maintenance Bond and Defect Guarantee upon completion of the project that shall warranty the project free from defects for a period of one year from the date of substantial completion.

F-24 Fine Grading and Compaction of Surface Gravel.

The Contractor under this contract shall be responsible for providing, placing, compacting and fine grading base and surface gravel, reclaim materials and associated work to prepare roadway surface for paving. The Contractor shall coordinate timing of fine grading and final compaction of surface gravel with paving contractor. Fine grading tolerance shall comply with MDOT specifications, latest edition. The Contractor is also responsible for providing and placing Type "A" MDOT surface gravel (1-1/2" minus) for fine grading as necessary on roadway including grading and compaction. This work shall be considered incidental the lump sum price item of the proposal.

F-25 Laydown Areas

The property is owned by the Auburn Water and Sewer District who will work with the contractor relative to equipment, material storage and laydown areas. Contractor shall be prepared to discuss the minimum potential area needed for their operations/construction for review by the District at the pre-construction meeting.

# SPECIFICATIONS – SECTION 10
## DEMOLITION

**DESCRIPTION:**

This section shall include:

The removal and disposal of all the existing communications compound improvements, structures, tower and utilities as specified on contract drawings and in contract documents. This work also includes any necessary land clearing, stumping and grubbing necessary for the project.

As permitted by the Auburn Water and Sewer District, demolition materials may be temporary stored at the equipment, material storage and laydown areas. All demolition materials shall remain the contactors responsibility for removal and disposal off-site

**METHOD OF MEASUREMENT:**

Demolition shall be measured as a lump sum amount.

**BASIS OF PAYMENT:**

The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City's designee.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 10 | Demolition | Lump Sum |

# SPECIFICATIONS – SECTION 20
# EARTHWORK

**DESCRIPTION:**

This section shall include:

Earthwork shall also include the removal of all pavements, road bases and excavation, cuts/fills, borrow materials, stumping/grubbing, rough and finish grading, cuts/fills, general excavation, ledge removal, utility ditching, compaction of fill areas, backfilling, shaping and grading, gravel, reclaim material, restoration of all disturbed areas, protection of existing structures, maintaining the site, dust control, site dewatering, general conditions, mobilization and all other work shown on the contract plans and required to provide a complete project for owners acceptance and not specified in other pay items.

**LEDGE REMOVAL:**

Based upon site conditions, the contractor will encounter shallow ledge (see Geotechnical Report within the Appendix). All ledge removal will be accomplished by backhoe mounted hydraulic hammers. No blasting shall be permitted. The ledge removal will be considered as part of the earthwork.

**WASTE AREA:**

The disposal of all excavated material shall be disposed of off-site by the Contractor at the Contractor's expense. The Contractor shall provide the LA911 Committee with documentation indicating the disposal location and that it compliant with applicable laws and regulations.

**METHOD OF MEASUREMENT:**

Earthwork shall be lump sum complete as stipulated in the pay items. The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City's designee.

**BASIS OF PAYMENT:**

The accepted quantity will be paid for at the contract price based upon the percentage complete for the units complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section.

The accepted quantity of common excavation will be paid for at the contract lump sum as provided in the following pay item schedule.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 20 | Earthwork | Lump Sum |

Gravel, reclaim, granular borrow, crushed stone and other materials necessary for construction shall be considered incidental to the pay item. Lump Sum costs shall include all excavation, shoring/bracing, backfilling, materials, dewatering, labor, compaction and all other work necessary for complete installation. Work shall include grading and compaction to meet requirements specified on contract drawings and in contract documents.

# SPECIFICATIONS – SECTION 30
## AGGREGATE BASE AND SUBBASE COURSE

**AGGREGATE:**
Sources of Aggregate and preliminary test results shall be submitted ten working days prior to any placement of material on the job. Failure of these preliminary tests will be grounds for rejection of material from that source. Aggregates will be tested on the job and shall meet these specifications as the material is incorporated into the work. All aggregate testing shall be completed by an independent laboratory and shall be paid for by the Contractor. Aggregate shall comply with MDOT Standard Specifications Revised through December of 2014, 703.06 Aggregate for Subbase with modifications as follows:

**703.06 (b) AGGREGATE SUBBASE:**
Gravel subbase shall not contain particles of rock which will not pass the three inch (3") square mesh sieve, and shall conform to type "D" Aggregate.

All gravel and reclaim materials for roadways, shoulders, accessway repairs/improvements shall be paid for as part of pay item 30 provided in the Schedule of Items.

**METHOD OF MEASUREMENT:**

Common Excavation shall be lump sum complete as stipulated in the pay items.

**BASIS OF PAYMENT:**
The accepted quantity will be paid for at the contract price based upon the percentage complete for the units complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section.

The accepted quantity of common excavation will be paid for at the contract lump sum as provided in the following pay item schedule.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 30 | Excavation, installation of road base materials and regrade existing access. | Lump Sum |

# SPECIFICATIONS – SECTION 40
## SOIL EROSION CONTROL

**DESCRIPTION:**
Work shall include all temporary and permanent erosion and sedimentation control measures throughout project construction as required by the contract plan (erosion control plans, details and notes) and contractor specifications including but not limited to providing and installing erosion control blanket, mulching (temporary and permanent), dust control, loaming/seeding, re-seeding, street sweeping, prevention of tracking from construction areas onto public ways, haybale barriers and all other work necessary to maintain the site in stable condition during and after construction and necessary to establish permanent vegetative cover. Note that this shall include loaming, seeding and mulching in addition to all other measures required to maintain site stability during construction. The contractor is responsible for installing and maintaining erosion and sedimentation control during construction. The contractor is also responsible for installation of erosion and drainage control measures prior to storm events and any repairs necessary after storm events. This shall be considered incidental to erosion and sedimentation control work. No extra payment will be made.

All erosion control measures installation and use shall comply with the requirements of the Maine Department of Environmental Protection standards.

This work shall include the restoration of any laydown areas provided by the Auburn Water & Sewer District.

**METHOD OF MEASUREMENT:**
Erosion and Sedimentation control will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:**
The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City's designee.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 40 | Erosion and sedimentation control measures | Lump Sum |
| 41 | Final seeding/stabilization of site | Lump Sum |

# SPECIFICATIONS – SECTION 50
## CONCRETE FOR SITE SLABS

The provisions of Section 502 - Structural Concrete, Section 503 - Reinforcing Steel of the most recent edition of MDOT Standard Specifications shall apply with the following additions and modifications:

**MATERAILS:**
Concrete shall be Class A.

**CONSTRUCTION REQUIREMENTS:**
The foundation bed shall be well graded and compacted to provide the thickness of concrete indicated on the plans. Prior to the concrete placement, the foundation bed shall be thoroughly and uniformly saturated with water. The bed shall be free of puddles and excessive surface water. The concrete mix shall be placed in a continuous placement operation; no construction joints will be allowed. The surface of the concrete shall receive a float finish. Immediately following the float finish, the surface shall be textured at right angles to the roadway using an approved open-pile, stiff bristle broom or mat.

**METHOD OF MEASUREMENT:** The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City's designee.

**BASIS OF PAYMENT:**

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 50 | Foundation design and installation, concrete work for equipment pad(s) | Lump Sum |

# SPECIFICATIONS – SECTION 60
## CHAIN LINK FENCE

**DESCRIPTION:**
This work shall include providing and installing chain link fence with barbed wire top as indicated on the plans. Prior to ordering of materials, contractor shall supply shop drawings for compliance with the contract documents. The basis for the material specifications shall be Section 607.05 of the most recent edition of MDOT Standard Specifications.

**SUBMITTALS**

Manufacturer's certification that the Precast Reinforced Concrete Box Sections meets the required ASTM Standards.

**METHOD OF MEASUREMENT:**

Chain link fence will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:**

The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City's designee.

Payment will be made under:

| Pay Item | | |
|---|---|---|
| 60 | Chain Link Fence | Lump Sum |

**SPECIFICATIONS – SECTION 70**
**12’ X 20’ CONCRETE SHELTER (GOFF HILL)**

**DESCRIPTION:** Work shall include providing and furnishing all materials, labor and equipment necessary to install a concrete shelter building as manufactured by VFP Industries. The installation of the manufacturer’s recommended foundation for the shelter shall be considered incidental to the required installation.

## SHELTER REQUIREMENTS:

The shelter shall be constructed of concrete.

- Size nominal 11'6” wide (12' wide with roof overhang) exterior x nominal 20' long exterior x nominal 9'2" high interior, one room concrete shelter.

- Standard construction in accordance with VFP product specifications. The structural loads of the proposed concrete shelter are as follows:

    - 200 pounds per square foot distributed floor loading while on foundation
    - 125 pounds per square foot distributed floor loading while lifting
    - 100 pounds per square foot distributed roof load
    - 150 mph wind load
    - Seismic zone 4

- Exposed aggregate exterior.

- The proposed shelter walls are capable of stopping 30.06 rifle fire per UL752 requirements. Unless otherwise specified, the shelter door is not bullet resistant.

- The proposed shelter walls will provide a two-hour fire rating.

- The walls will be insulated to R-11 with hardboard insulation.

- The ceiling will be insulated to R-19 with hardboard insulation.

- The interior walls and ceiling will be sheathed with white nupoly board.

- Light colored industrial grade vinyl tile floor covering.

- One (1) 42" wide x 84" high insulated steel exterior door, with aluminum continuous tamper-proof hinge, passage style lever handle, deadbolt lockset and fiberglass weather hood.

- One (1) hydraulic door closer.

## POWER DISTRIBUTION:

- One (1) MOV only lightning arrestor; General Electric Model TLE120SO50WM.

- One (1) 60 Amp, 240 V unfused safety switch for lightning arrestor isolator during maintenance.

- One (1) 200 Amp, 10,000 AIC, 120/240 VAC, single phase, 60 Hz, 40 space main breaker, snap-in utility power distribution panel, in a NEMA 1 surface mount enclosure (Cutler Hammer).

- Two (2) 200 Amp, 10,000 AIC, 120/240 VAC, single phase, 60 Hz, 40 space main breaker, snap-in technical power distribution panels, in a NEMA 1 surface mount enclosure (Cutler Hammer).

- Circuit breakers for all VFP installed equipment and customer loads as specified.

- One (1) shelter wall penetration to serve as utility power service entry.

- One (1) 200 Amp, 240 Volt, fused, double pole, single throw safety switch.

- Six (6) 20 Amp spécification grade duplex réceptacles.

- One (1) 20 Amp specification grade exterior duplex receptacle on a ground fault interrupter circuit.

- Four (4) equipment AC circuit drops up to 30 Amps routed in conduit or wire way to customer specified locations on the ceiling above customer equipment racks. Flexible conduit including circuit conductors will be coiled and tagged for identification with enough length to reach the floor and an additional four feet (4') of circuit conductors to be cut to length and terminated by the customer.

- Installation of one (1) customer furnished automatic transfer switch.

**LIGHTING:**

- Six (6) four foot, two tube surface mounted fluorescent light fixtures.

- One (1) LED exterior door light with vandal resistant lens and photo cell.

- One (1) emergency light.

**HVAC:**

- Two (2) two ton, 240 volts, single phase wall mount air conditioning units, with low ambient and compressor anti cycle controls, integral 5 kW resistance heat strips and washable dust filters.

- Redundant lead/lag controls allowing approximately equal operating time on each air conditioning unit.

**ALARM DEVICE CONTACTS:**

The following alarm device contacts will be wired and brought to a location specified by the customer. The alarm wires will be coiled and tagged for identification per VFP standards. Unless otherwise stated in this proposal, termination at the customer's equipment is assumed to be provided by others.

There are no provisions for audible, visual or remote alarm monitoring offered, except where it is integral to the device offered or stated otherwise in this proposal.

- One (1) line voltage smoke detector
- One (1) intrusion alarm switch with form “C” contacts rated .1 Amps at 28 VDC
- One (1) high temperature alarm
- One (1) low temperature alarm

**GROUNDING:**

- Provisions for the connection of a grounding electrode conductor at the shelter service equipment
- INTERIOR PERIMETER GROUND: #2 Bare stranded copper with each end lugged to the master ground bar
- GROUND BUSS BAR: (1) kit includes 2 connected ground bars with insulators and copper straps with vinyl covers. Harger ground kit model EPK-12
- FNE GROUND BUSS: #2 stranded green copper cable jacketed mounted to the cable ladder
- ALL GROUNDING MEETS OR EXCEEDS MOTOROLA's R56 SPECIFICATIONS.

**ACCESSORIES:**

- One (1) twelve - port/waveguide entry panel with 4" sleeves and protective blank covers
- Twenty-five feet (25') of 12" wide cable ladder/tray
- One (1) 4’ x 8’ x 3/4" equipment mounting board
- One (1) portable 10-pound $CO_2$ fire extinguisher
- One (1) hand held emergency eye wash station
- One (1) first aid kit
- One (1) wall pocket folder holder
- One (1) service manual

If requested, VFP will provide three (3) sets of shelter drawings with each shelter unit order. Typical foundation drawings based upon normal soil conditions are available to support calculations for recommended shelter tie down locations. No other foundation drawings are offered in the proposed shelter price. Additional foundation drawings can be provided and will be negotiated separately.

All wiring will be installed in surface mounted conduit or wire ways if specified and will be in full compliance with ANSI/NFPA-70 - The National Electrical Code, latest revision.

**METHOD OF MEASUREMENT:**
Installation of the shelter will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:**

The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 70 | Provide and install VFP 12’ x 20’ Shelter | Lump Sum |

## SPECIFICATIONS – SECTION 80
## TOWER INSTALLATION

**DESCRIPTION:** Work shall include providing and furnishing all materials, labor and equipment necessary to install the 180-self-supporting telecommunications tower. The tower is required to be manufactured and provided by Valmont Communication Structures. Plans for the Tower are included in the appendix.

**METHOD OF MEASUREMENT:**
Tower will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:** The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 80 | Provide and erect tower | Lump Sum |

## SPECIFICATIONS – SECTION 90
## ANTENNA INSTALLATIONS

**DESCRIPTION:** Work shall include providing and furnishing all materials, labor and equipment necessary to install the client required communication antennas, dishes and other appurtenances as indicated below.

**TOWER ANTENNA PLACEMENT:**

| Resource | Antenna Type | Cable Type | Side arm | Elevation (Mount Point) | Leg |
|---|---|---|---|---|---|
| #2 Combiner RX | HD Dipole | 7/8" | 2' | 180' | B |
| #1 Combiner TX | 20'FG Omni | 7/8" | 6' | 150' | A |
| SPARE | 20'FG Omni | 1/2" | 6' | 120' | B |
| #3 H2o/St.Fire | 20'FG Omni | 1/2" | 6' | 100' | C |
| #5 SWCC/ASO Aub | 20'FG Omni | 1/2" | 6' | 80' | B |
| #4 School | 10'FG Omni | 1/2" | 3' | 80' | C |
| #6 Multi | 20'FG Omni | 1/2" | 6' | 50' | A |
| Wales FD | VHF Yagi | 1/2" | 2' | 40 | B |
| Sabattus FD | VHF Yagi | 1/2" | 2' | 30 | B |
| #7 Multi-Open | 10'FG Omni | 1/2" | 6' | 20' | C |
| | | | | | |
| ASO Mech Falls | FG Omni | 1/2" | 0 | Off Ice Bridge | |
| | | | | | |
| Goff to Webber Lnk | 2' Dish-ODU | Cat5 | 1 | 120' | C |
| Goff to Gracelawn Lnk | 2' Dish-ODU | Cat5 | 1 | 110' | A/B |
| | | | | | |
| Webber to Goff Lnk | 2' Dish-ODU | Cat5 | 1 | 150' Webber Tower* | |
| | | | | | |
| Customer to Supply: Antennas, Microwave ODU/Dish, Coax, Cat5, Connectors, Polyphasers, and ground kits. Contractor to supply: Sidearms, Hardware, Fasteners, Ground Plates, weatherproofing, and alignment of microwave. | | | | | |

A=West
B=East
C=South

**BASIS OF PAYMENT:** The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 90 | Furnish hardware and mount the specified antennas | Lump Sum |

## SPECIFICATIONS – SECTION 100
## PROPANE TANK AND GENERTOR

**DESCRIPTION:** Work shall include providing and furnishing all materials, labor and equipment necessary to install a 500-gallon propane tank and a commercial grade 25 KVA propane fired Generac Generator. The propane tank shall meet the requirements of NFPA 58 and any and all applicable local and state standards relative to construction, installation and required separations.

**SUBMITTALS:**
Contractor shall submit shop drawings of tank and generator for client review and approval.

**BASIS OF PAYMENT:** The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 100 | Furnish and install 500 gal. propane tank and Generac 25 KVA generator | Lump Sum |
| OP-4 | Furnish and install 500 gal. propane tank and Generac 25 KVA generator | Lump Sum |

## SPECIFICATIONS – SECTION 110
## SITE UTILITIES/COMMUNICATION LINES AND EQUIPMENT CONNECTIONS

**DESCRIPTION:** Work shall include the installation of site utilities, communication lines and equipment connections for a fully operational tower.

**METHOD OF MEASUREMENT:**
Site utility work will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:** The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| 110 | Underground utility services to tower compound from utility pole(s) | Lump Sum |
| 111 | Site installation of site electric, meter enclosure, telecom hand hole in tower compound | Lump Sum |
| 112 | Site grounding materials and installation for all site structures | Lump Sum |
| 113 | Install lightning rod and strobe light (materials and installation) | Lump Sum |
| 114 | Electrical, telecom, coaxial installation conduit installation for equipment including ice bridge | Lump Sum |
| 115 | Provide required connections of equipment to operate with controls | Lump Sum |
| OP-4 | Underground utility services to tower compound from utility pole(s), installation of site electric, meter enclosure, and telecom | Lump Sum |

**SPECIFICATIONS – SECTION OP-1**
**10’ X 10’ CONCRETE SHELTER (WEBBER AVENUE SITE)**

**DESCRIPTION:** Work shall include providing and furnishing all materials, labor and equipment necessary to install a concrete shelter building as manufactured by VFP Industries. The proposed installation will be to furnish equipment to provide service at the existing tower on the site. The installation of the manufacturer’s recommended foundation for the shelter shall be considered incidental to the required installation.

## SHELTER REQUIREMENTS:

The shelter shall be constructed of concrete.

- Size nominal 9'6” wide (10' wide with roof overhang) exterior x nominal 10' long exterior x nominal 9'2" high interior, one room concrete shelter.
- Standard construction in accordance with VFP product specifications. The structural loads of the proposed concrete shelter are as follows:
    - 200 pounds per square foot distributed floor loading while on foundation
    - 125 pounds per square foot distributed floor loading while lifting
    - 100 pounds per square foot distributed roof load
    - 150 mph wind load
    - Seismic zone 4
- Exposed aggregate exterior.
- The proposed shelter walls are capable of stopping 30.06 rifle fire per UL752 requirements. Unless otherwise specified, the shelter door is not bullet resistant.
- The proposed shelter walls will provide a two-hour fire rating.
- The walls will be insulated to R-11 with hardboard insulation.
- The ceiling will be insulated to R-19 with hardboard insulation.
- The interior walls and ceiling will be sheathed with white NuPoly board.
- Light colored industrial grade vinyl tile floor covering.
- One (1) 42" wide x 84" high insulated steel exterior door, with aluminum continuous tamper-proof hinge, passage style lever handle, deadbolt lockset and fiberglass weather hood.
- One (1) hydraulic door closer.

## POWER DISTRIBUTION:

- One (1) MOV only lightning arrestor; General Electric Model TLE120SO50WM.
- One (1) 60 Amp, 240 V unfused safety switch for lightning arrestor isolator during maintenance.

- One (1) 200 Amp, 10,000 AIC, 120/240 VAC, single phase, 60 Hz, 40 space main breaker, snap-in utility power distribution panel, in a NEMA 1 surface mount enclosure (Cutler Hammer).

- Two (2) 200 Amp, 10,000 AIC, 120/240 VAC, single phase, 60 Hz, 40 space main breaker, snap-in technical power distribution panels, in a NEMA 1 surface mount enclosure (Cutler Hammer).

- Circuit breakers for all VFP installed equipment and customer loads as specified.

- One (1) shelter wall penetration to serve as utility power service entry.

- One (1) 200 Amp, 240 Volt, fused, double pole, single throw safety switch.

- Four (4) 20 Amp specification grade duplex receptacles.

- One (1) 20 Amp specification grade exterior duplex receptacle on a ground fault interrupter circuit.

- Two (2) equipment AC circuit drops up to 30 Amps routed in conduit or wire way to customer specified locations on the ceiling above customer equipment racks. Flexible conduit including circuit conductors will be coiled and tagged for identification with enough length to reach the floor and an additional four feet (4') of circuit conductors to be cut to length and terminated by the customer.

- Installation of one (1) customer furnished automatic transfer switch.

**LIGHTING:**

- Three (3) four foot, two tube surface mounted fluorescent light fixtures.

- One (1) LED exterior door light with vandal resistant lens and photo cell.

- One (1) emergency light.

**HVAC:**

- Two (2) two ton, 240 volts, single phase wall mount air conditioning units, with low ambient and compressor anti cycle controls, integral 5 kW resistance heat strips and washable dust filters.

- Redundant lead/lag controls allowing approximately equal operating time on each air conditioning unit.

**ALARM DEVICE CONTACTS:**

The following alarm device contacts will be wired and brought to a location specified by the customer. The alarm wires will be coiled and tagged for identification per VFP standards. Unless otherwise stated in this proposal, termination at the customer's equipment is assumed to be provided by others.

There are no provisions for audible, visual or remote alarm monitoring offered, except where it is integral to the device offered or stated otherwise in this proposal.

- One (1) line voltage smoke detector
- One (1) intrusion alarm switch with form “C” contacts rated .1 Amps at 28 VDC
- One (1) high temperature alarm
- One (1) low temperature alarm

**GROUNDING:**

- Provisions for the connection of a grounding electrode conductor at the shelter service equipment
- INTERIOR PERIMETER GROUND: #2 Bare stranded copper with each end lugged to the master ground bar
- GROUND BUSS BAR: (1) kit includes 2 connected ground bars with insulators and copper straps with vinyl covers. Harger ground kit model EPK-12
- FNE GROUND BUSS: #2 stranded green copper cable jacketed mounted to the cable ladder
- ALL GROUNDING MEETS OR EXCEEDS MOTOROLA's R56 SPECIFICATIONS.

**ACCESSORIES:**

- One (1) twelve - port/waveguide entry panel with 4" sleeves and protective blank covers
- Eighteen feet (18') of 12" wide cable ladder/tray
- One (1) 4’ x 8’ x 3/4" equipment mounting board
- One (1) portable 10-pound $CO_2$ fire extinguisher
- One (1) hand held emergency eye wash station
- One (1) first aid kit
- One (1) wall pocket folder holder
- One (1) service manual

If requested, VFP will provide three (3) sets of shelter drawings with each shelter unit order. Typical foundation drawings based upon normal soil conditions are available to support calculations for recommended shelter tie down locations. No other foundation drawings are offered in the proposed shelter price. Additional foundation drawings can be provided and will be negotiated separately.

All wiring will be installed in surface mounted conduit or wire ways if specified and will be in full compliance with ANSI/NFPA-70 - The National Electrical Code, latest revision.

**METHOD OF MEASUREMENT:**
Installation of the shelter will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:**

The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| OP-1 | Provide and install VFP 10’ x 10’ Shelter | Lump Sum |

**SPECIFICATIONS – SECTION OP-2**
**12’ X 16’ CONCRETE SHELTER (WEBBER AVENUE SITE)**

**DESCRIPTION:** Work shall include providing and furnishing all materials, labor and equipment necessary to install a concrete shelter building as manufactured by VFP Industries. The proposed installation will be to furnish equipment to provide service at the existing tower on the site. The installation of the manufacturer’s recommended foundation for the shelter shall be considered incidental to the required installation.

## SHELTER REQUIREMENTS:

The shelter shall be constructed of concrete.

- Size nominal 11'6” wide (12' wide with roof overhang) exterior x nominal 16' long exterior x nominal 9'2" high interior, one room concrete shelter.
- Standard construction in accordance with VFP product specifications. The structural loads of the proposed concrete shelter are as follows:
    - 200 pounds per square foot distributed floor loading while on foundation
    - 125 pounds per square foot distributed floor loading while lifting
    - 100 pounds per square foot distributed roof load
    - 150 mph wind load
    - Seismic zone 4
- Exposed aggregate exterior.
- The proposed shelter walls are capable of stopping 30.06 rifle fire per UL752 requirements. Unless otherwise specified, the shelter door is not bullet resistant.
- The proposed shelter walls will provide a two-hour fire rating.
- The walls will be insulated to R-11 with hardboard insulation.
- The ceiling will be insulated to R-19 with hardboard insulation.
- The interior walls and ceiling will be sheathed with white NuPoly board.
- Light colored industrial grade vinyl tile floor covering.
- One (1) 42" wide x 84" high insulated steel exterior door, with aluminum continuous tamper-proof hinge, passage style lever handle, deadbolt lockset and fiberglass weather hood.
- One (1) hydraulic door closer.

## POWER DISTRIBUTION:

- One (1) MOV only lightning arrestor; General Electric Model TLE120SO50WM.
- One (1) 60 Amp, 240 V unfused safety switch for lightning arrestor isolator during maintenance.

- One (1) 200 Amp, 10,000 AIC, 120/240 VAC, single phase, 60 Hz, 40 space main breaker, snap-in utility power distribution panel, in a NEMA 1 surface mount enclosure (Cutler Hammer).

- Two (2) 200 Amp, 10,000 AIC, 120/240 VAC, single phase, 60 Hz, 40 space main breaker, snap-in technical power distribution panels, in a NEMA 1 surface mount enclosure (Cutler Hammer).

- Circuit breakers for all VFP installed equipment and customer loads as specified.

- One (1) shelter wall penetration to serve as utility power service entry.

- One (1) 200 Amp, 240 Volt, fused, double pole, single throw safety switch.

- Six (6) 20 Amp specification grade duplex receptacles.

- One (1) 20 Amp specification grade exterior duplex receptacle on a ground fault interrupter circuit.

- Four (4) equipment AC circuit drops up to 30 Amps routed in conduit or wire way to customer specified locations on the ceiling above customer equipment racks. Flexible conduit including circuit conductors will be coiled and tagged for identification with enough length to reach the floor and an additional four feet (4') of circuit conductors to be cut to length and terminated by the customer.

- Installation of one (1) customer furnished automatic transfer switch.

**LIGHTING:**

- Six (6) four foot, two tube surface mounted fluorescent light fixtures.

- One (1) LED exterior door light with vandal resistant lens and photo cell.

- One (1) emergency light.

**HVAC:**

- Two (2) two ton, 240 volts, single phase wall mount air conditioning units, with low ambient and compressor anti cycle controls, integral 5 kW resistance heat strips and washable dust filters.

- Redundant lead/lag controls allowing approximately equal operating time on each air conditioning unit.

**ALARM DEVICE CONTACTS:**

The following alarm device contacts will be wired and brought to a location specified by the customer. The alarm wires will be coiled and tagged for identification per VFP standards. Unless otherwise stated in this proposal, termination at the customer's equipment is assumed to be provided by others.

There are no provisions for audible, visual or remote alarm monitoring offered, except where it is integral to the device offered or stated otherwise in this proposal.

- One (1) line voltage smoke detector
- One (1) intrusion alarm switch with form “C” contacts rated .1 Amps at 28 VDC
- One (1) high temperature alarm
- One (1) low temperature alarm

**GROUNDING:**

- Provisions for the connection of a grounding electrode conductor at the shelter service equipment
- INTERIOR PERIMETER GROUND: #2 Bare stranded copper with each end lugged to the master ground bar
- GROUND BUSS BAR: (1) kit includes 2 connected ground bars with insulators and copper straps with vinyl covers. Harger ground kit model EPK-12
- FNE GROUND BUSS: #2 stranded green copper cable jacketed mounted to the cable ladder
- ALL GROUNDING MEETS OR EXCEEDS MOTOROLA's R56 SPECIFICATIONS.

**ACCESSORIES:**

- One (1) twelve - port/waveguide entry panel with 4" sleeves and protective blank covers
- Twenty-five feet (25') of 12" wide cable ladder/tray
- One (1) 4’ x 8’ x 3/4" equipment mounting board
- One (1) portable 10-pound $CO_2$ fire extinguisher
- One (1) hand held emergency eye wash station
- One (1) first aid kit
- One (1) wall pocket folder holder
- One (1) service manual

If requested, VFP will provide three (3) sets of shelter drawings with each shelter unit order. Typical foundation drawings based upon normal soil conditions are available to support calculations for recommended shelter tie down locations. No other foundation drawings are offered in the proposed shelter price. Additional foundation drawings can be provided and will be negotiated separately.

All wiring will be installed in surface mounted conduit or wire ways if specified and will be in full compliance with ANSI/NFPA-70 - The National Electrical Code, latest revision.

**METHOD OF MEASUREMENT:**
Installation of the shelter will be measured based upon the percentage complete and in-place.

**BASIS OF PAYMENT:**

The accepted quantity will be paid for at the contract price based upon the percentage complete. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for all worked as described in this section. The percentage complete will be determined by the Engineer or City.

Payment will be made under:

| Pay Item | | Pay Unit |
|---|---|---|
| OP-2 | Provide and install VFP 12’ x 16’ Shelter | Lump Sum |

**APPENDIX**

# R E P O R T

17-0906 S

September 8, 2017

## Explorations and Geotechnical Engineering Services

Proposed Communications Tower
491 Court Street
Auburn, Maine

Prepared For:
Sebago Technics, Inc.
Attention: Rob McSorley, P.E.
75 John Roberts Road, Suite 1A
South Portland, ME 04106

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, ME 04039
T: 207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

*www.swcole.com*

## TABLE OF CONTENTS

17-0906 S

September 8, 2017

Sebago Technics, Inc.
Attention: Rob McSorley, P.E.
75 John Roberts Road, Suite 1A
South Portland, ME 04106

Subject: Explorations and Geotechnical Engineering Services
Proposed Communications Tower
491 Court Street
Auburn, Maine

Dear Rob:

In accordance with our Agreement, dated August 17, 2017, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

## 1.0 INTRODUCTION

### 1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations and earthwork associated with the proposed construction. Our scope of services included four test boring explorations, a geotechnical analysis of the subsurface findings and preparation of this report.

### 1.2 Site and Proposed Construction

The site is located at 491 Court Street in Auburn, Maine, adjacent to an existing gravel access road and southeast of a large water tank. The site is currently occupied by a fenced in communications tower pad and associated equipment shed and utilities.

We understand development plans call for construction of a new 180-foot, three-legged, self-supporting communications tower with prefabricated equipment building and generator pad within the approximate footprint of the existing tower pad. We understand the existing site structures will be removed in favor of the new construction. Proposed and existing site grades, as well as proposed structural loading, are not available at this time.

Existing and proposed site features are shown on the "Exploration Location Plan" attached in Appendix B.

## 2.0 EXPLORATION AND TESTING

### 2.1 Explorations

Four test borings (B-101 through B-104) were made at the site on August 25, 2017 by S. W. Cole Explorations, LLC. The exploration locations were selected and established in the field by S. W. Cole Engineering, Inc. (S.W.COLE) using measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. Ground surface elevations shown on the boring logs were estimated based on the topography shown on the "Exploration Location Plan".

### 2.2 Testing

The test borings were drilled using a combination of solid stem auger and cased wash-boring techniques. Rock coring was performed at boring B-101 using an NQ2 diamond bit. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) techniques. SPT blow counts are shown on the logs.

Soil and bedrock samples obtained from the explorations were returned to our laboratory for visual classification.

## 3.0 SUBSURFACE CONDITIONS

### 3.1 Soil and Bedrock

The test borings encountered a subsurface profile consisting of about 1 to 4 feet of granular fill consisting of loose to medium dense sand with varying portions of silt, gravel, organics, and debris, overlying bedrock. A layer of probable weathered bedrock was penetrated by the drill tooling by up to about 1.5 feet. Rock core obtained at boring B-101 is classified as the Sangerville formation with Rock Quality Designation (RQD) varying from 39 to 91 percent, corresponding to a rock quality of poor to excellent.

Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

### 3.2 Groundwater

Free water was not observed at the test borings. Groundwater likely becomes perched on the relatively shallow bedrock at the test borings. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

## 4.0 EVALUATION AND RECOMMENDATIONS

### 4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- The proposed tower and equipment building may be supported on spread footing foundations bearing on sound, intact bedrock. Foundations shallower than the frost depth should be pinned to bedrock. Rock anchors may be utilized to resist uplift loading on tower foundations, as necessary.

- Depending on final proposed grades, bedrock removal may be needed. As blasting may adversely affect the anchorage zone for rock anchors, we recommend bedrock by hydraulic hoe-ramming, as may be needed.

**4.2 Site and Subgrade Preparation**

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil should be completely removed from areas of proposed fill and construction. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

All existing fill, foundations, and utilities must be removed from beneath the proposed structures and foundations. The extent of removal should extend 1 foot laterally outward from outside edge of perimeter footings for every 1-foot of excavation depth (1H:1V bearing splay). The overexcavated area should be backfilled with compacted Structural Fill.

The proposed tower and equipment building foundations should bear on sound, intact bedrock. A leveling mat of lean concrete may be placed over the bedrock surface prior to installing formwork and reinforcing steel.

**4.3 Excavation and Dewatering**

Excavation work will generally encounter existing fills and bedrock. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall.

As blasting may adversely affect the anchorage zone for rock anchors, we recommend bedrock removal by hydraulic hoe-ramming, as may be necessary. Pre-construction surveys of structures and infrastructure within 500 feet of the rock removal area should be completed prior to hoe-ramming.

Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

## 4.4 Foundations

We recommend the proposed communications tower and equipment building be supported on spread footings bearing on sound, intact bedrock. Foundations shallower than frost depth should be pinned to bedrock for frost protection. For foundations bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design consideration:

| Geotechnical Parameters for Spread Footings and Foundation Walls | |
|---|---|
| Design Frost Depth (100 year AFI) | 4.5 feet |
| Net Allowable Bedrock Bearing Pressure | 8.0 ksf |
| Base Friction Factor | 0.7 |
| Total Unit Weight of Backfill | 125 pcf |
| At-Rest Lateral Earth Pressure Coefficient | 0.5 |
| Internal Friction Angle of Backfill | 30° |
| Seismic Soil Site Class | B (IBC 2015) |

### 4.4.1 Rock Anchors

Based on the subsurface findings, bonded or mechanical rock anchors with corrosion protection appear feasible to resist tower foundation uplift loads. We offer the following parameters for design consideration:

| Geotechnical Parameters for Rock Anchors | |
|---|---|
| Rock Quality Designation (RQD) | 39 to 91 % (see boring log) |
| Dry Unit Weight | 165 pcf |
| Ultimate Shear Strength | 600 psf |
| Rock Cone Pull-out Angle | 60 degrees |
| Average Ultimate Bond Strength | 150 psi |

A rock anchor would ideally be installed beneath each tower leg as necessary for uplift resistance. Rock anchors installed in groups should be designed with consideration of pullout resistance from overlapping failure surfaces. We recommend a center-to-center spacing of at least 1.2 times the unbonded length for rock anchors installed in groups. If anchors are installed in groups spaced closer than 1.2 times the unbonded length, we request S.W.COLE be permitted the opportunity to review the design.

The predrilled hole for each rock anchor should be cleaned of any drilling fines, and its tightness should be tested to determine the need for pre-grouting. Rock anchors should be installed according to the manufacturer's recommendations. Additionally, each anchor should be performance tested to at least 133 percent of design load. After testing and prior to secondary grouting, we recommend locking off each anchor at the design lock-off load.

**4.5 Backfill and Compaction**

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Granular Borrow: Fill to raise site grades outside of equipment building and tower pad footprints should be sand or silty sand meeting the requirements of 2014 MaineDOT Standard Specification 703.19 Granular Borrow.

Structural Fill: Backfill for foundations should be non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

| Structural Fill | |
|---|---|
| **Sieve Size** | **Percent Finer by Weight** |
| 4 inch | 100 |
| 3 inch | 90 to 100 |
| ¼ inch | 25 to 90 |
| #40 | 0 to 30 |
| #200 | 0 to 6 |

Base Gravel: Gravel for yard surfacing, as needed, should be crushed sand and gravel meeting the requirements of MaineDOT 703.06 Type A.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill in building and paved areas be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557.

**4.6 Weather Considerations**

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

**4.7 Design Review and Construction Testing**

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork and foundation recommendations have been properly interpreted and implemented.

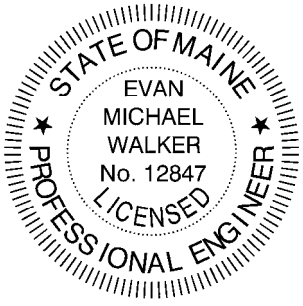
A soils and concrete testing program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities, the preparation of foundation bearing surfaces, installation and testing of rock anchors, as well as to provide testing and IBC Special Inspection services for soil and concrete construction materials.

**5.0 CLOSURE**

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

**S. W. Cole Engineering, Inc.**




Evan M. Walker, P.E.
Geotechnical Engineer

EMW:tjb

# APPENDIX A

## Limitations

This report has been prepared for the exclusive use of Sebago Technics, Inc. for specific application to the Proposed Communications Tower at 491 Court Street in Auburn, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

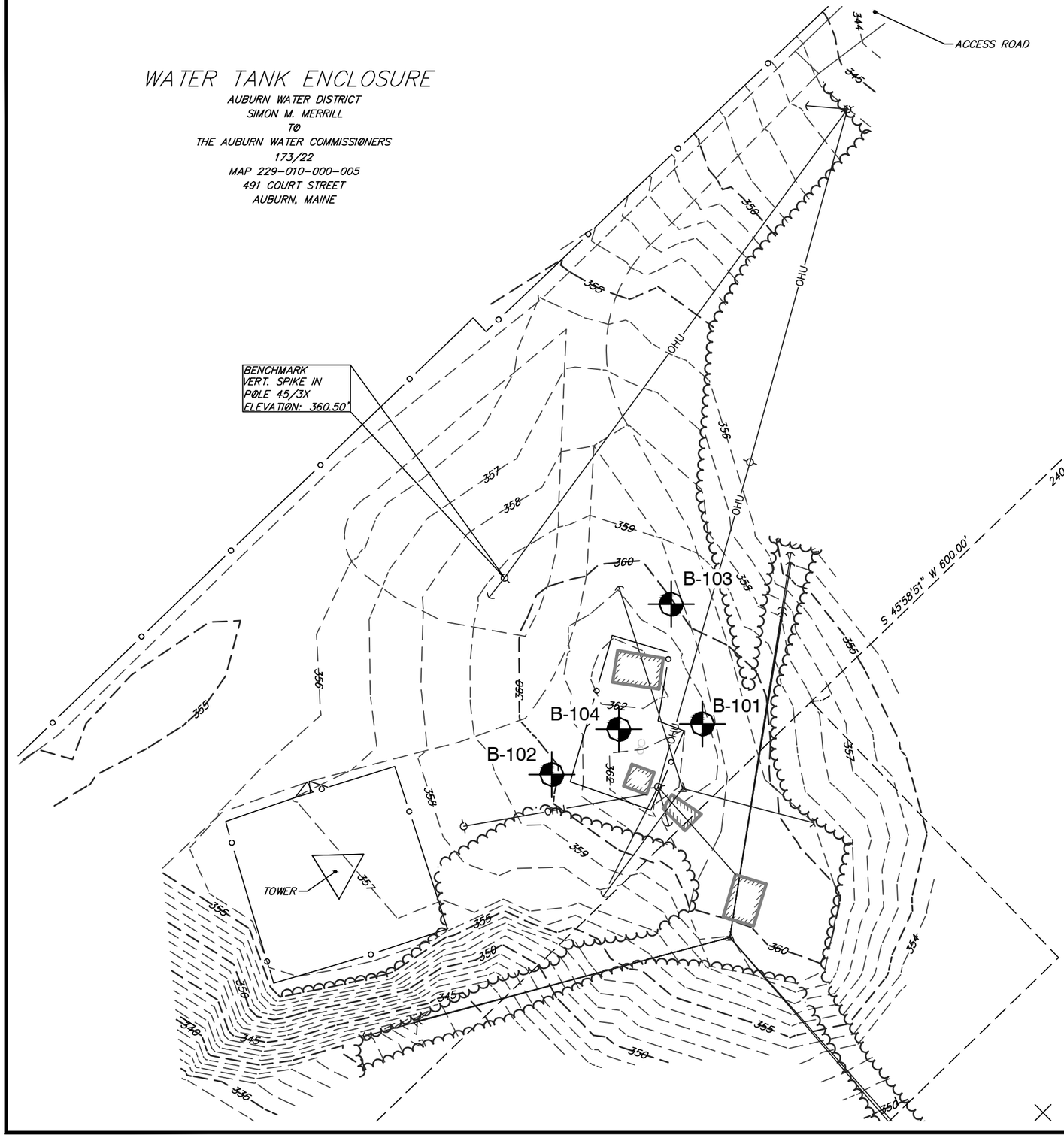
Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

# APPENDIX B

## Figures

# WATER TANK ENCLOSURE

AUBURN WATER DISTRICT
SIMON M. MERRILL
TØ
THE AUBURN WATER COMMISSIØNERS
173/22
MAP 229-010-000-005
491 COURT STREET
AUBURN, MAINE




**LEGEND:**

APPROXIMATE BORING LOCATION

**NOTES:**

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=30' SCALE PLAN OF THE SITE ENTITLED "EXISTING CONDITIONS PLAN," PREPARED BY SEBAGO TECHNICS, INC., DATED 09/01/2017.
2. BORINGS B-101 THROUGH B-103 WERE LOCATED IN THE FIELD BY SURVEY BY SEBAGO TECHNICS, INC. AND PROVIDED ON THE ABOVE REFERENCED PLAN.
3. BORING B-104 WAS LOCATED IN THE FIELD BY MEASUREMENTS FROM EXISTING SITE FEATURES.
4. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
5. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 40 80 Feet

S.W.COLE ENGINEERING, INC.

SEBAGO TECHNICS, INC.

## EXPLORATION LOCATION PLAN

PROPOSED COMMUNICATIONS TOWER
491 COURT STREET
AUBURN, MAINE

| | | | |
|---|---|---|---|
| Job No.: | 17-0906 | Scale: | 1" = 40' |
| Date : | 09/07/2017 | Sheet: | 1 |

# APPENDIX C

## Exploration Logs and Key

# BORING LOG

**CLIENT:** Sebago Technics, Inc.
**PROJECT:** Proposed Commuincations Tower
**LOCATION:** 491 Court Street, Auburn, Maine

**BORING NO.:** B-101
**SHEET:** 1 of 1
**PROJECT NO.** 17-0906
**DATE START:** 8/25/2017
**DATE FINISH:** 8/25/2017

## Drilling Information

**LOCATION:** See Exploration Location Plan
**ELEVATION (FT):** 361' +/-
**TOTAL DEPTH (FT):** 14.4
**LOGGED BY:** Patrick Otto
**DRILLING CO.:** S. W. Cole Explorations, LLC
**DRILLER:** Jeff Lee
**DRILLING METHOD:** Cased Boring
**RIG TYPE:** Track Mounted CME 850
**AUGER ID/OD:** N/A / N/A
**SAMPLER:** Standard Split-Spoon
**HAMMER TYPE:** Automatic
**HAMMER WEIGHT (lbs):** 140 / 300
**CASING ID/OD:** 4 in / 4 1/2 in
**CORE BARREL:** NQ2 / 2
**HAMMER EFFICIENCY FACTOR:** 0.81
**HAMMER DROP (inch):** 30 / 16
**WATER LEVEL DEPTHS (ft):** 8/25/2017 No free water observed
**GENERAL NOTES:**

**KEY TO NOTES AND SYMBOLS:**
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
$S_v$ = Field Vane Shear Strength, kips/sq.ft.; $q_u$ = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

| Elev. (ft) | Depth (ft) | Casing Pen. (bpf) | SAMPLE INFORMATION: Sample No. | Type | Depth (ft) | Pen./ Rec. (in) | Blow Count or RQD | Field / Lab Test Data | Graphic Log | Sample Description & Classification | $H_20$ Depth | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | | | 1D | | 0-1.1 | 13/10 | 5-6-15/1" | | | Medium dense, brown silty gravelly SAND with organics (FILL) | | |
| | | | | | | | | | | 1.1 Advanced by solid stem auger through bedrock to 2' | | |
| | 5 | | 1R | | 4-9.1 | 61/61 | 41 | | | Advanced by roller cone through bedrock from 2-4' | | |
| 355 | | | | | | | | | | Sangerville Formation: consists of feldspathic biotite and calc-silicate rocks. Hard to medium; fine to coarse grained; slightly weathered. Close to moderately spaced fractures at 5 - 85 degrees from horizontal. | | |
| | 10 | | 2R | | 9.1-10 | 11/11 | 39 | | | | | |
| | | | 3R | | 10-14.4 | 53/53 | 91 | | | | | |
| 350 | | | | | | | | | | 14.4 Bottom of Exploration at 14.4 feet | | |

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

# BORING LOG

**CLIENT:** Sebago Technics, Inc.
**PROJECT:** Proposed Commuincations Tower
**LOCATION:** 491 Court Street, Auburn, Maine

**BORING NO.:** B-102
**SHEET:** 1 of 1
**PROJECT NO.** 17-0906
**DATE START:** 8/25/2017
**DATE FINISH:** 8/25/2017

## Drilling Information

**LOCATION:** See Exploration Location Plan
**ELEVATION (FT):** 360' +/-
**TOTAL DEPTH (FT):** 4.5
**LOGGED BY:** Patrick Otto
**DRILLING CO.:** S. W. Cole Explorations, LLC
**DRILLER:** Jeff Lee
**DRILLING METHOD:** Solid Stem Auger
**RIG TYPE:** Track Mounted CME 850
**AUGER ID/OD:** N/A / 4 1/2 in
**SAMPLER:** Standard Split-Spoon
**HAMMER TYPE:** Automatic
**HAMMER WEIGHT (lbs):** 140 / 300
**CASING ID/OD:** N/A /N/A
**CORE BARREL:**
**HAMMER EFFICIENCY FACTOR:** 0.81
**HAMMER DROP (inch):** 30 / 16
**WATER LEVEL DEPTHS (ft):** 8/25/2017 No free water observed
**GENERAL NOTES:**

**KEY TO NOTES AND SYMBOLS:**
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
$S_v$ = Field Vane Shear Strength, kips/sq.ft.; $q_u$ = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

| Elev. (ft) | Depth (ft) | Casing Pen. (bpf) | SAMPLE INFORMATION: Sample No. | Type | Depth (ft) | Pen./ Rec. (in) | Blow Count or RQD | Field / Lab Test Data | Graphic Log | Sample Description & Classification | $H_20$ Depth | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1D | | 0-2 | 24/5 | 5-6-6-7 | | | Medium dense to loose, brown silty SAND, some gravel with brick and asphalt (FILL) | | |
| | | | 2D | | 2-4 | 24/3 | 6-3-3-7 | | | | | |
| | | | | | | | | | | 4.1 Advanced by solid stem auger through probable bedrock | | |
| | | | | | | | | | | 4.5 Refusal at 4.5 feet | | |

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

# BORING LOG

| | |
|---|---|
| **CLIENT:** | Sebago Technics, Inc. |
| **PROJECT:** | Proposed Commuincations Tower |
| **LOCATION:** | 491 Court Street, Auburn, Maine |

| | |
|---|---|
| **BORING NO.:** | **B-103** |
| **SHEET:** | 1 of 1 |
| **PROJECT NO.** | 17-0906 |
| **DATE START:** | 8/25/2017 |
| **DATE FINISH:** | 8/25/2017 |

## Drilling Information

**LOCATION:** See Exploration Location Plan **ELEVATION (FT):** 360' +/- **TOTAL DEPTH (FT):** 2.5 **LOGGED BY:** Patrick Otto

**DRILLING CO.:** S. W. Cole Explorations, LLC **DRILLER:** Jeff Lee **DRILLING METHOD:** Solid Stem Auger

**RIG TYPE:** Track Mounted CME 850 **AUGER ID/OD:** N/A / 4 1/2 in **SAMPLER:** Standard Split-Spoon

**HAMMER TYPE:** Automatic **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** N/A /N/A **CORE BARREL:**

**HAMMER EFFICIENCY FACTOR:** 0.81 **HAMMER DROP (inch):** 30 / 16

**WATER LEVEL DEPTHS (ft):** 8/25/2017 No free water observed

**GENERAL NOTES:**

**KEY TO NOTES AND SYMBOLS:**

Water Level
- ▽ At time of Drilling
- ▼ At Completion of Drilling
- ▼ After Drilling

D = Split Spoon Sample
U = Thin Walled Tube Sample
R = Rock Core Sample
V = Field Vane Shear

Pen. = Penetration Length
Rec. = Recovery Length
bpf = Blows per Foot
mpf = Minute per Foot

WOR = Weight of Rods
WOH = Weight of Hammer
RQD = Rock Quality Designation
PID = Photoionization Detector

$S_v$ = Field Vane Shear Strength, kips/sq.ft.
$q_u$ = Unconfined Compressive Strength, kips/sq.ft.
N/A = Not Applicable

| Elev. (ft) | Depth (ft) | Casing Pen. (bpf) | SAMPLE INFORMATION: Sample No. | Type | Depth (ft) | Pen./ Rec. (in) | Blow Count or RQD | Field / Lab Test Data | Graphic Log | Sample Description & Classification | $H_20$ Depth | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1D | X | 0-1 | 12/6 | 2-18-50/0" | | | 1.0 Medium dense, brown silty SAND, some gravel (FILL) | | |
| | | | | | | | | | | 2.5 Advanced by solid stem auger through probable bedrock | | |
| | | | | | | | | | | Refusal at 2.5 feet | | |

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

**BORING NO.:** **B-103**

# BORING LOG

**CLIENT:** Sebago Technics, Inc.
**PROJECT:** Proposed Commuincations Tower
**LOCATION:** 491 Court Street, Auburn, Maine

**BORING NO.:** B-104
**SHEET:** 1 of 1
**PROJECT NO.** 17-0906
**DATE START:** 8/25/2017
**DATE FINISH:** 8/25/2017

## Drilling Information

**LOCATION:** See Exploration Location Plan
**ELEVATION (FT):** 361.5' +/-
**TOTAL DEPTH (FT):** 2.4
**LOGGED BY:** Patrick Otto
**DRILLING CO.:** S. W. Cole Explorations, LLC
**DRILLER:** Jeff Lee
**DRILLING METHOD:** Solid Stem Auger
**RIG TYPE:** Track Mounted CME 850
**AUGER ID/OD:** N/A / 4 1/2 in
**SAMPLER:** Standard Split-Spoon
**HAMMER TYPE:** Automatic
**HAMMER WEIGHT (lbs):** 140 / 300
**CASING ID/OD:** N/A /N/A
**CORE BARREL:**
**HAMMER EFFICIENCY FACTOR:** 0.81
**HAMMER DROP (inch):** 30 / 16
**WATER LEVEL DEPTHS (ft):** 8/25/2017 No free water observed
**GENERAL NOTES:**

**KEY TO NOTES AND SYMBOLS:**
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
$S_v$ = Field Vane Shear Strength, kips/sq.ft.; $q_u$ = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

| Elev. (ft) | Depth (ft) | Casing Pen. (bpf) | SAMPLE INFORMATION: Sample No. | Type | Depth (ft) | Pen./ Rec. (in) | Blow Count or RQD | Field / Lab Test Data | Graphic Log | Sample Description & Classification | $H_20$ Depth | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | | | 1D | | 0-2 | 24/8 | 4-5-4-12 | | | Loose, brown silty SAND, some gravel with organics (FILL) | | |
| | | | | | | | | | | 2.0 Advanced by solid stem auger through probable bedrock | | |
| | | | | | | | | | | 2.4 Refusal at 2.4 feet | | |

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

# KEY TO THE NOTES & SYMBOLS
## Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**Key to Symbols Used:**

| | | |
|---|---|---|
| w | - | water content, percent (dry weight basis) |
| $q_u$ | - | unconfined compressive strength, kips/sq. ft. - laboratory test |
| $S_v$ | - | field vane shear strength, kips/sq. ft. |
| $L_v$ | - | lab vane shear strength, kips/sq. ft. |
| $q_p$ | - | unconfined compressive strength, kips/sq. ft. – pocket penetrometer test |
| O | - | organic content, percent (dry weight basis) |
| $W_L$ | - | liquid limit - Atterberg test |
| $W_P$ | - | plastic limit - Atterberg test |
| WOH | - | advance by weight of hammer |
| WOM | - | advance by weight of man |
| WOR | - | advance by weight of rods |
| HYD | - | advance by force of hydraulic piston on drill |
| RQD | - | Rock Quality Designator - an index of the quality of a rock mass. |
| $\gamma_T$ | - | total soil weight |
| $\gamma_B$ | - | buoyant soil weight |

**Description of Proportions:**

| | |
|---|---|
| Trace: | 0 to 5% |
| Some: | 5 to 12% |
| "Y" | 12 to 35% |
| And | 35+% |

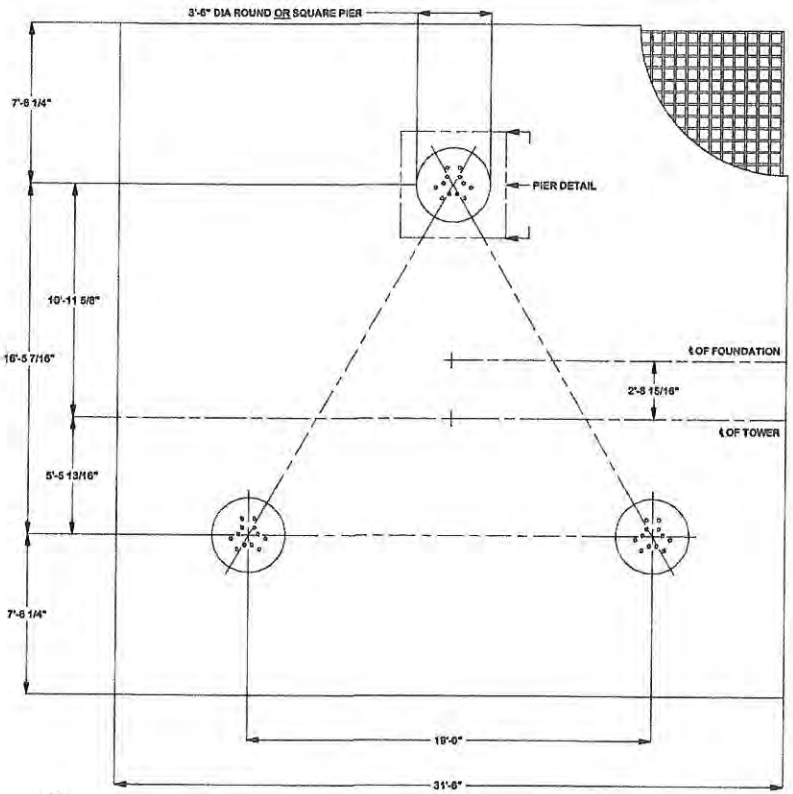
**Description of Stratified Soils**

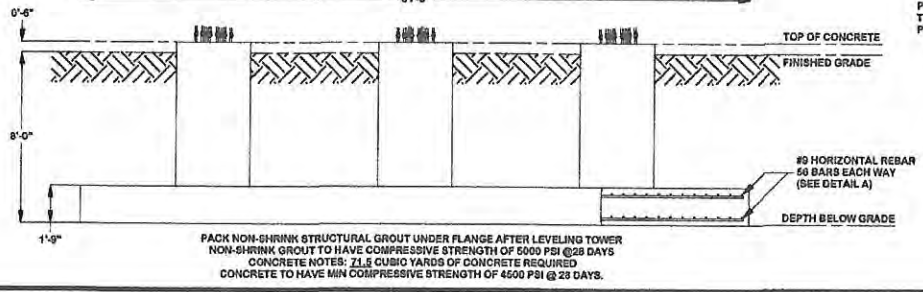
| | |
|---|---|
| Parting: | 0 to 1/16" thickness |
| Seam: | 1/16" to ½" thickness |
| Layer: | ½" to 12" thickness |
| Varved: | Alternating seams or layers |
| Occasional: | one or less per foot of thickness |
| Frequent: | more than one per foot of thickness |

***REFUSAL:*** **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

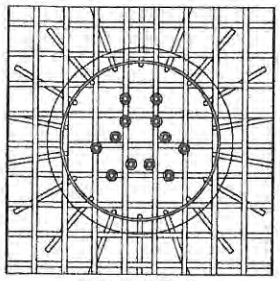
***REFUSAL:*** **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

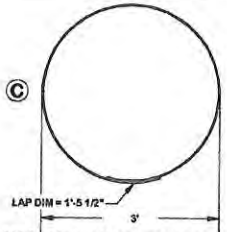



PACK NON-SHRINK STRUCTURAL GROUT UNDER FLANGE AFTER LEVELING TOWER
NON-SHRINK GROUT TO HAVE COMPRESSIVE STRENGTH OF 5000 PSI @28 DAYS
CONCRETE NOTES: 71.6 CUBIC YARDS OF CONCRETE REQUIRED
CONCRETE TO HAVE MIN COMPRESSIVE STRENGTH OF 4500 PSI @ 28 DAYS.



PIER DETAIL (TOP VIEW)




#4 CIRCULAR TIE - SPACED EQUALLY ~ 1'-1 3/8" (TYP)
APPROX UNBENT LENGTH ~ 10'-8 3/4"

| REBAR/ANCHOR STEEL TABLE | | | | |
|---|---|---|---|---|
| ITEM | QTY | PART DESCRIPTION | UNIT WT. | NET WT. |
| 1 | 36 | 1" DIA. x 72" LONG ANCHOR BOLT - 123653 | 16.06 | 578.07 |
| 2 | 3 | EMBEDMENT PLATE - 212008 | 28.51 | 85.54 |
| A | 224 | HORIZONTAL REBAR (#9 REBAR) | 105.56 | 23645.99 |
| B | 54 | VERTICAL REBAR (#9 REBAR) | 23.02 | 1291.53 |
| C | 24 | CIRCULAR TIE (#4 REBAR) | 7.18 | 172.28 |
| D | 81 | STANDEE (#5 REBAR) | 5.48 | 444.21 |
| | | | APPROX TOTAL WT # | 26217.58 |

REBAR NOTES: ALL REINFORCING BARS MUST CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS.

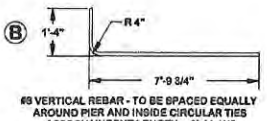
FOUNDATION NOTES:

1. SOIL AS PER REPORT BY HDG, DATED 09/24/14, FOR MAIN STREET (ROUTE 4), PHILLIPS, ME
2. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 (2008) BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR NOT PERMITTED.
3. A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH PIROD. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR.
4. ALL FILL SHOULD BE PLACED IN LOOSE LEVEL LIFTS OF NO MORE THAN 12" THICK. FILL MATERIALS SHOULD BE CLEAN AND FREE OF ORGANIC AND FROZEN MATERIALS OR ANY OTHER DELETERIOUS MATERIALS. COMPACT FILL TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D1557.
5. BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED.
6. CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE.
7. FOUNDATION IS TO BEAR ON INSITU GRANULAR SOIL OR BEDROCK AT APPROXIMATELY 8.0' BELOW GRADE. THE BEARING SURFACE IS TO BE FREE OF ANY LOOSE MATERIAL & SUBSEQUENTLY INSPECTED BY A QUALIFIED ON-SITE GEOTECHNICAL ENGINEER.
8. THE FOUNDATION MUST BEAR ENTIRELY ON UNIFORM BEARING MATERIAL. THE FOUNDATION IS NOT TO BEAR ON ANY COMBINATION OF SOIL AND BEDROCK AS THIS MAY CAUSE EXCESSIVE DIFFERENTIAL SETTLEMENT.
9. PNEUMATIC HAMMERS, RIPPERS, AND/OR BLASTING MAY BE REQUIRED TO REMOVE MATERIAL FROM THE EXCAVATION.
10. GRADE THE SITE TO DRAIN AWAY FROM FOUNDATION.
11. COMPACTED BACKFILL PLACED ABOVE FOUNDATIONS MUST HAVE A MIN. MOIST UNIT WEIGHT OF 135PCF.


#9 HORIZONTAL REBAR - SPACED EQUALLY ~ 6 3/4" ℄ TO ℄ (TYP)

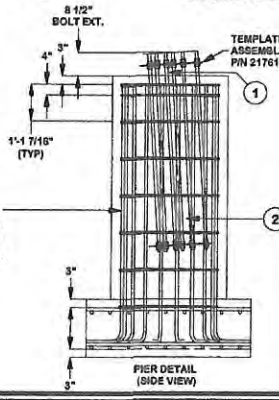
ATTENTION CONTRACTOR INSTALLING ANCHOR BOLT!
1" DIA. ANCHOR BOLTS REQUIRED.
VERIFY THE PART NUMBER AND SIZES FOR ALL COMPONENTS ON THIS PAGE. IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY VALMONT/PIROD, INC PRIOR TO INSTALLATION!!

TEMPLATE INSTALLATION NOTES:
1. TEMPLATE PLACEMENT MUST BE +/- 3".
2. TEMPLATE ASSEMBLY MUST BE LEVEL +/- 1".
3. BASE LEG REFERENCE ANGLE 3.31°.
4. INSTALLED TEMPLATE CLEARANCE: 2" MIN - 4" MAX



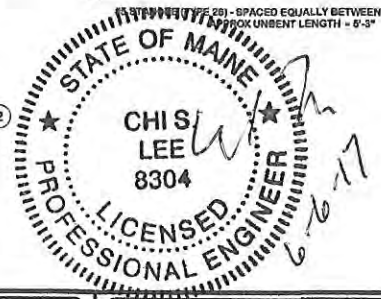

#9 VERTICAL REBAR - TO BE SPACED EQUALLY AROUND PIER AND INSIDE CIRCULAR TIES
APPROX UNBENT LENGTH = 6'-11 1/4"

CIRCULAR TIE NOTES:
PLACE CIRCULAR TIES SO LAPS ON ADJACENT TIES ARE 180 DEGREES APART. PLACE ONE TIE AT TOP OF REBAR GRID AND ONE TIE AT TOP OF PIER. EQUALLY SPACE TIES ALONG THE PIER, WITH ONE BAR PLACED 4" DOWN FROM THE TOP TIE. 8 TIES PER PIER (SEE DETAIL C)





#5 STANDEE (TYPE 2B) - SPACED EQUALLY BETWEEN GRIDS = 4" (TYP)
APPROX UNBENT LENGTH = 5'-3"




| | | | | | |
|---|---|---|---|---|---|
| REV | DESCRIPTION OF REVISIONS | CPD | BY | DATE |

REVISION HISTORY

SITE
PHILLIPS, ME
VERIZON WIRELESS
U 19 X 190'

DESCRIPTION
SHALLOW MAT WITH RAISED PIERS
TOWER FOUNDATION #1



valmont STRUCTURES
1-877-467-4763 Plymouth, IN
1-800-547-2151 Salem, OR

| STRUCTURE APPROVAL | FOUNDATION APPROVAL |
|---|---|
| SKK 6/5/2017 | M_S 6/5/2017 |

ENG. FILE NO. 360163

DWG. NO. 274874F

PAGE 1 OF 1


SEBAGO TECHNICS

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South Portland, ME 04106
(207) 200-2100

250 Goddard Rd. - Suite B
Lewiston, ME 04240
(207) 783-5656

# SITE LOCATION MAP

OF GOFF HILL TELCOMMUNICATIONS TOWER PROJECT

Project No. 17258

| | | | |
|---|---|---|---|
| LOCATION: WEBBER AVENUE SITE LEWISTON, ME | FOR: PUBLIC LIBRARY TRUST | SCALE: 1"=100' | |
| | | DATE: 10/29/17 | |
| | | SHEET: 1 OF 1 | |